Amendments to the Specification

Please amend the paragraph on page 11, beginning at line 13 and ending on page 12, line 6 as follows:

In FIG. 1, an x-ray ~~defraction~~ diffraction apparatus 10 in accordance with the present invention is shown. The apparatus 10 includes an x-ray head 12 from which x-rays are directed at a part 14, such as the illustrated bridge tension member 16. The main advantage provided by the present apparatus 10 is in the ability of the x-ray head 12 to be moved in a plurality of different directions relative to the part via various adjustment mounts, generally designated 18, that are provided on frame structure 20 supporting the x-ray head 12 for its movements. In this regard, the adjustment mounts 18 afford the head 12 a range of movement so that the head 12 can direct x-rays at the part from different positions thereof and at corresponding different positions on the part 14. As discussed, this is particularly helpful where the part 14 is in service and subject to various use and environmental conditions that can cause highly specific and localized variations in the strength-related characteristic being measured by the x-ray defraction apparatus 10. By having the ability to scan a region of the part, aberrations in the characteristic being measured by the apparatus 10 can be readily determined so, for instance, such localized variations will not unduly influence the determination as to the remaining useful life of the part 14. By way of example and not limitation, the adjustment mounts 18 herein can provide the x-ray head 12 with movements in the range of 2 to 4 inches.

Please amend the paragraph on page 13, beginning at line 12 and ending on page 14, line 2 as follows:

The x-ray ~~defraction~~ diffraction apparatus 10 will next be more particularly described. The x-ray head 12 herein utilizes divergent x-ray optics that are preferably combined with a close proximity focus distance of approximately 30 to 40 millimeters, a predetermined sized aperture of the head 12 which results in an appropriately shaped divergent x-ray beam such as

to illuminate the bridge tension member 16 as shown at 40 in FIG. 1, and a movable mask 42 which can limit the strain data measured, for example, to one wire rope or cable strand at a time. The mask 42 is specifically designed for the wire rope or cable 16 to be measured so that the curvature thereof has little or no effect on the measurements being taken via the x-ray head 12 herein.

Please amend the paragraph on page 14, beginning at line 17 and ending on page 21, line 5 as follows:

In typical x-ray ~~defraction~~ diffraction systems, the x-ray head 12 generates x-rays in an ~~elongate~~ elongated housing 44 extending in a fore and aft x-axis direction along an internal, longitudinal axis 46 thereof. A target anode (not shown) in the housing 44 directs x-rays out from the housing 44 through a collimator 48 at the lower, forward end thereof. The x-rays from the collimator 48 are directed at a specific point on the part 14 to be measured. Fiber optic detectors 50 are mounted on either side of the collimator 48 on an arcuate detector mount 52. Depending on the x-ray defraction technique utilized, the x-ray head 12 can remain stationary while directing x-rays at the point on the part 14 from which measurements are desired, or the head can be oscillated in an arcuate path through a variety of tilt angles via a beta oscillation drive 54 (FIG. 5) so that the point on the part 14 is subject to multiple exposures by way of the multiple tilt angles at which the x-rays are directed at the part 14 from the head 12, and specifically the collimator 48 thereof. As is known, the beta oscillation drive 54 can be of a rack and pinion variety, including an arcuate rack 56 that is driven in a similarly shaped slot of an arcuate slide bearing block 58.

Please amend the paragraph on page 22, beginning at line 9 as follows:

In both apparatus 10 and apparatus 10a, the adjustment mounts 18 provide the head 12 the ability to be moved to different positions relative to the part 14 without moving the part itself. Both rough and fine adjustments mounts 18 are provided so that an operator can move to different regions on a part 14 in a rapid manner where accuracy is not as critical but speed

of movement is more important, and then can use the fine adjustment mounts to precisely control head movement as it scans across a particular region on the part 14 between measurement points thereon. This combination provides for highly efficient and accurate measurements across a representative sampling of points on a part 14 so that determinations can be more accurately made with respect to the measured strength characteristic(s) of the part 14 and its remaining useful life. In addition to the advantage with respect to curved surfaces previously discussed, the movements of the head 12 in the x-, y- and z-axes allow for parts having multilevel surfaces to be measured without requiring operator intervention to move the parts 14, and the attendant time delays associated therewith, as described above. Accordingly, the present invention provides improved flexibility in terms of the types of parts 14 that can be efficiently measured and accurately characterized with the x-ray ~~defraction~~ diffraction equipment described herein.